

CLAIMS

1. A method of managing memory in a system, the system comprising two or more processors and a system memory, wherein each processor has a cache memory, and the system memory is divided into pages subdivided into blocks, the method comprising the steps of:
- flagging each of the pages of system memory with a status, the status being one of "cacheable", "non-cacheable" and "free";
 - retaining a page record as to the status of each page;
 - if a block of memory is required for storage of data local to a specific processor then allocating a block of a page having "cacheable" status to be accessed by said processor, but if no block of a page having "cacheable" status is available then selecting a page having "free" status and changing the status of said page to "cacheable";
 - if a block of memory is required for storage of data to be accessed by more than one processor then allocating a block of a page having "non-cacheable" status to be accessed by any processor, but if no block of a page having "non-cacheable" status is available then selecting a page having "free" status and changing the status of said pages to "non-cacheable";
 - retaining an allocation record as to which blocks of a page have been allocated;
 - if an allocated block is no longer required then amending the allocation record to discard the allocation of the block; and
 - if no blocks on a page of memory having "cacheable" or "non-cacheable" status are allocated then changing the status of said page to "free".
2. A method according to claim 1 wherein the step of discarding the allocation of a block allocated from a page having "cacheable" status comprises the step of discarding the data of the block.
3. A microprocessor system, the microprocessor system comprising two or more central processing units (CPU's), each CPU having a cache memory and the system further

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comprising a system memory, the system memory being divided into pages and the pages into blocks, and the pages being flagged with one of three statuses, namely "cacheable", "non-cacheable" and "free" wherein the system is responsive to a request for allocation of memory space of cacheable or non-cacheable type, by allocating a block of memory from a page of appropriate status or, if such a block is unavailable, a block from a page of "free" status, the system thereafter changing the status of said page from "free" to "cacheable" or "non-cacheable" as the case may be, and is responsive to a request that an allocated block of memory is to be discarded.

4. A system according to claim 3, the system further being responsive to a request to discard a block in that if said block is the only allocated block on the relevant page of memory then the system changes the status of said page to "free".
5. A system according to claim 3 in which the cache memory of each processor is divided into lines.
6. A system according to claim 5 wherein the size of the blocks of the system memory is a whole multiple of the size of the lines.
7. A system according to claim 4 in which the cache memory of each processor is divided into lines.
8. A system according to claim 7 wherein the size of the blocks of the system memory is a whole multiple of the size of the lines.

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